

RELIABILITY OR CONVENIENCE? A SURVEY OF TOOL PREFERENCE FOR MEASURING SPINAL RANGE OF MOTION IN PHYSICAL THERAPY PRACTICE. Armstrong M, Tammany J, Haley J, Herbsleb S, Kelley A, Martin C, Resendiz S. Hardin-Simmons University Department of Physical Therapy, Abilene, TX.

PURPOSE: (1) Identify the most used spinal range of motion (ROM) tools by clinicians, (2) compare spinal ROM tools deemed reliable by current research versus spinal ROM tools used by orthopedic specialists and non-specialists, and (3) compare spinal ROM tools used in practice versus those taught in school. **SUBJECTS:** Licensed physical therapists (PT) and physical therapist assistants (PTA) (n=26,232) from 32 states whose name appeared on their state licensure website or the clinical instructor list for Hardin-Simmons University Physical Therapy School (HSU PT) were invited to participate in the study. **METHODS:** A 38-question electronic survey was developed and distributed online through email lists of all licensed PTs and PTAs available from the state licensing boards in 32 states or the clinical instructor list for HSU PT via Microsoft Forms. Three reminder emails were sent out bi-monthly. Participants answered questions related to demographics, work experience, and the most commonly used measuring tool for cervical and lumbar spinal ROM. Descriptive statistics were used to analyze the frequency of measurement tool usage. Comparisons were made between (1) orthopedic specialists and non-specialists, (2) technique taught in physical therapy programs and technique currently practiced, and (3) the most reliable technique according to research and what each PT clinician uses in daily practice. SPSS Statistics (v26.0) was used for data analysis. Chi-Square tests ($p \leq 0.05$) with pairwise comparisons ($p \leq 0.01$) were used to determine differences between orthopedic specialists and non-specialists' responses related to ROM measurement tool selection and reasons for these selections. **RESULTS:** A total of 26,232 invitations were sent via email and 205 (PT = 169 PTA = 36) participated for a response rate of 0.7%. Non-specialists reported goniometer as the most reliable tool for measuring flexion and extension compared to orthopedic specialists ($p = 0.049$) ($n = 44, 25.9\%$ versus $n = 1, 2.9\%$). Non-specialists reported goniometer ($n=59, 34.7\%$ versus $n=1, 2.9\%$) and orthopedic specialists reported CROM ($n=16, 45.7\%$ versus $n=41, 24.1\%$) as the most reliable tool for measuring cervical side bend ($p = 0.007$). Non-specialists reported goniometer ($n=29, 17.1\%$ versus $n=0, 0.0\%$) and orthopedic specialists reported bubble inclinometer ($n=27, 77.1\%$ versus $n=85, 50.0\%$) as the most reliable tool for measuring lumbar flexion and extension ($p = 0.005$). Orthopedic specialists reported the reason for measuring lumbar side bend was based on efficiency compared to non-specialists ($p = 0.010$) ($n=18, 51.4\%$ versus $n=38, 22.4\%$). Orthopedic specialists reported the reason for measuring lumbar rotation was based on efficiency compared to non-specialists ($p = 0.007$) ($n=18, 51.4\%$ versus $n=40, 23.5\%$). Additionally, it was found that more than half (flexion and extension: 57.6%; side bend: 54.1%; rotation: 56.1%) of PTs and PTAs did not use the same tool that was taught during school for lumbar ROM. **CONCLUSION:** The goniometer was found to be the preferred tool for measuring cervical spinal ROM and visual estimation was the preferred tool for measuring lumbar spinal ROM. The majority of PT clinicians reported measuring cervical spinal ROM the same way they were taught in school, but many used a different method than was taught in school for measuring lumbar spinal ROM. Further research needs to be done on measuring lumbar spinal ROM with visual estimation, as it is widely used in the clinic without evidence to its reliability. **CLINICAL RELEVANCE:** There is a significant difference over what is the most popular method for measuring spinal ROM, between orthopedic specialists and non-specialists regarding tool choice compared to what is deemed reliable by research, and what is used in the clinic compared to what is taught in the classroom.